DOCUMENT RESUME

ED 100 480 JC 750 111

AUTHOR Lee, Glenda E.
TITLE A Descriptive Analysis of the Relationship Between Academic Ability and Achievement of Middlesex Community College Students.
INSTITUTION Middlesex Community Coll., Bedford, Mass.
PUB DATE 74
NOTE 13p.

EDRS PRICE MF-$0.75 HC-$1.50 PLUS POSTAGE
DESCRIPTORS *Academic Achievement; *Dropout Identification; *Junior Colleges; Junior College Students; Logical Thinking; *Reading Ability; School Surveys; Self Help Programs; Student Characteristics; *Student Motivation

ABSTRACT

The purpose of this study was to determine if there was a relationship between the academic achievement and academic ability of students who did and those who did not request assistance in reading. Subjects used in the study were 416 entering students at Middlesex Community College in the fall of 1973. Responses on tests of reading ability, logical reasoning ability, and academic motivation, were used to place students in groups representing low ability or motivation (under 40 percentile), average ability or motivation (40-60 percentile), and high ability or motivation (over 60 percentile). All entering students indicate whether they need assistance in various categories, including reading. It is not clearly shown that students who ask for assistance do better or worse than those who do not ask for assistance. Reading speed and comprehension are shown to be clearly related to academic success. Student scoring above the 60th percentile in reading ability are much less likely to drop out. There appeared to be a lack of awareness on the part of students with low reading ability that they do not read as well as more successful students. Logical reasoning was also correlated with academic success. Program recommendations are made. Tables detailing the interrelationships of all the variables examined are included. (AH)

ED100480

U.S. DEPARTMENT OF HEALTH
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

A DESCRIPTIVE ANALYSIS OF THE RELATIONSHIP BETWEEN ACADEMIC ABILITY AND ACHIEVEMENT OF MIDDLESEX COMMUNITY COLLEGE STUDENTS

Dr. Glenda E. Lee
Associate Dean

OFFICE OF INSTITUTIONAL RESEARCH
MIDDLESEX COMMUNITY COLLEGE
BEDFORD, MASS. 01730

Summer 1974

JC 750 111

INTRODUCTION

One of the characteristics of students in community colleges relied upon most frequently for educational planning is academic ability. In general, studies have indicated that two-year college students do not score as high on the traditional measuring instruments of academic competence as students who enroll in senior institutions. Two studies relating to academic achievement and academic ability of selected groups of students at Middlesex Community College were made during the past two years.

The purpose of one study was to determine if there was a relationship between the academic achievement and academic ability of students who did and those who did not request assistance in reading. This study was expanded to include a comparison of the academic achievement of groups of students who are and who are not academically motivated. The Comparative Guidance and Placement Program (CGP) was used as a basis of study for both groups.

A third factor was then considered in the comparison of academic ability and achievement--logical reasoning. Logical reasoning ability was based on a single score obtained from CGP.

The complete report on the relationships of these factors is given in A Descriptive Analysis of the Relationship between Academic Ability and Achievement of Middlesex Community College Students.

A DESCRIPTIVE ANALYSIS OF THE RELATIONSHIP BETWEEN ACADEMIC ABILITY AND ACHIEVEMENT OF MIDDLESEX COMMUNITY COLLEGE STUDENTS

Background

Since September 1972, entering students at Middlesex Community College have been answering questions in a biographical inventory as part of the Comparative Guidance and Placement Program. Trends in student characteristics have been identified and reported in earlier institutional research reports.

In February, 1974 the investigation was expanded to study the relationship between selected student characteristics and their requests for assistance. This report deals with 416 students who entered Middlesex Community College in the fall of 1973. Sixty-four percent are female and 36 percent are male. Of the 94 percent indicating their age, 72 percent were under 21 years of age, 12 percent were between 21-24, and 10 percent were over 24 years of age.

Fifteen percent of the students indicated they were enrolled in various allied health programs, 19 percent were in secretarial, 22 percent in business, 27 percent in liberal arts, and 17 percent in liberal studies.

For purposes of comparison and analysis, students scores have been separated into three percentile ranges. The group scoring above 60 percentile is the high range, below 40 percentile the low, and between 40-60 the middle range. These groupings were used because 40-60 is usually considered the average range in dealing with percentiles. The term percentile means how each student ranks in comparison with any 100 students taking the same inventory or assessment.

In studying groups of students who may or may not need academic assistance, it seemed wise to be able to identify those who are above average as well as those who are below average. (This also provides a basis for comparing academic achievement of groups when the "C" grade or 2.0 is considered average.) The middle range was limited to a 20 point spread (40-60 percentile) to keep it the smallest group because the focus of this study is on high or low achievers who do or do not request reading assistance, who are or are not academically motivated, and who are above or below average in logical reasoning ability.

Reading Speed & Comprehension

Reading scores are based on responses to questions which participants give after timed reading of selected passages. It is a test of their ability to understand main ideas, significant details, and ideas that were implied but not necessarily stated directly in the reading.

Only 96 percent of the students taking the CGP received a reading score. This may have been because they did not attempt that part of the test or scored so low it did not show in the percentiles. Of the 96 percent recorded, 34 percent had below the 40 percentile, 41 percent had above the 60 percentile, and the remaining 21 percent scored in the middle range.

Comparison of Reading Score & Academic Achievement at Middlesex Community College.

Academic achievement is the term used to describe the grade point average the student had earned at the end of the first semester at Middlesex Community College.

The study shows that there is a difference in the academic achievement of students who score above the 60 percentile in the CGP reading scale and those who score below the 40 percentile. Of the 41 percent who scored above the 60 percentile, about one-half have over a 3.0 grade point average at the end of their first semester at Middlesex Community College, and 86 percent have over a 2.0. This means that about 14 percent may be on academic probation. However, not even one student had left college.

Of the 34 percent who scored below the 40 percentile in reading, about 10 percent have over a 3.0 grade point average, and 58 percent have above a 2.0. About 20 percent are below a 2.0; but, 21 percent have dropped out of college. The scores of those in the middle range of the reading percentile scale are spread somewhat more evenly by grade point average. About one-third have above a 3.0 GPA, another third have between a 2.0-3.0, and the remainder have either below a 2.0 or have dropped out.

Comparison of Reading Percentile & Academic Achievement of Students Who Do and Do Not Request Assistance.

At the time that entering students complete the Comparative Guidance and Placement Program they indicate whether they need assistance in various categories. These categories include financial aid, counseling,

full-time or part-time employment, study techniques, and reading. This report deals only with students who do or do not request assistance in reading. No attempt has been made to provide reading assistance to the group indicating the need. However, the tutors have been available upon request and some help has been provided in study skills.

Only 42 percent of the students (168) asked for assistance in reading. Of that number, 16 percent scored below the 40 percentile and 9 percent were in the middle range (40-60 percentile). But 17 percent scored above the 60 percentile. Of the 54 percent (216) who did not request assistance, 18 percent were below the 40 percentile and 12 percent were in the middle range, while 24 percent were above the 60 percentile. Thus, it can be seen that there is little difference in reading speed and comprehension scores between the group who indicated on their Comparative Guidance and Placement program inventory that they needed assistance in reading and the group who did not give such indication.

TABLE I

Reading Percentiles & Grade Point Averages of
Students Who Do & Do Not Request Assistance in Reading
By Percentage *
N=399

G.P.A.	Asked for Assistance				Did Not Ask for Assistance			
	Percentile Range			Total	Percentile Range			Total
	Above 60	40-60	Below 40		Above 60	40-60	Below 40	
Above 3.0	53	34	10		45	35	9	
2.5-2.9	19	18	30		26	22	25	
2.0-2.4	14	13	36		17	22	30	
1.5-1.9	5	18	14		6	8	5	
1.0-1.4	5	2	8		3	8	10	
0.0-1.0	4	0	0		3	3	0	
Drop-out	0	13	0		0	0	0	
Total								
Percentage	17	9	16	42	24	12	18	54
Number	68	36	64	168	96	48	72	216

*Where percentages do not equal 100, it is due to rounding off.

Table I shows that of the 68 students who scored above the 60 percentile and asked for assistance, 53 percent received above a 3.0 G.P.A., 33 percent received between a 2.0-3.0, and 14 percent received below a 2.0. Of the 96 students who scored above the 60 percentile and did not request reading assistance, the percentages are somewhat comparable.

Table I also shows that as many students who scored above the 60 percentile (68) as below the 40 percentile (64) asked for assistance in reading. This may indicate a greater awareness of the importance of reading to successful college work among good readers. However, many of the students with less than average reading ability do succeed academically at Middlesex Community College.

Of the 136 students who scored below the 40 percentile, 64 students asked for assistance, and 72 did not. There appears to be little difference in their academic achievement, but 21 percent of those not asking for assistance dropped out. It is not known whether those requesting assistance on the CGP were the same students as those who received tutoring or study-skill help. They probably were not given reading help per se. If all students scoring below the 40 percentile were given reading help, it is possible that the 21 percent who dropped out might have survived. But, it is also apparent from Table I that many of those who did ask for assistance (with below 40 percentile reading scores) survived with average grades.

Another group which appears to need assistance who did ask for it, is the middle percentile range (40-60) group. Thirteen percent dropped out. Two-thirds of those in the middle range who asked for help received over a 2.0 but one-third were in academic difficulty. Thus, it appears that one-third of the middle percentile group who asked for assistance really needed help.

The conclusions that one can draw from these comparisons are:

1. About half of the students who scored below the 60 percentile in reading and did not ask for assistance probably need help.

2. Three-fourths of the students who scored below the 40 percentile in reading and did ask for assistance apparently received help or are motivated highly enough to achieve satisfactory grades.

3. About one-third of the group who scored in the middle percentile range and who did ask for assistance, need help.

4. About one-fifth of the group who scored in the middle range who did not ask for assistance, also need help.

5. Students who scored above the 60 percentile in reading rarely need academic assistance.

Comparison of Academic Achievement of Groups Who Are and Are Not Academically Motivated.

Part of the biographical inventory of the CGP is an attitude survey relating to various academic areas. Students are questioned about their attitude toward study, their study habits, their achievement in school, their willingness to work hard for grades, and their aspirational level. Based on responses to these questions, a comparative scale has been made to show the academic motivation of students.

Using the percentile groupings of 40-60 as average, 43 percent of the total group of students are highly motivated. That is, they score above the 60 percentile. Thirty-eight percent are so low in motivation that they score below the 40 percentile. The remaining 18 percent score between the 40-60 percentile.

Table II shows that of the 161 students who scored above the 60 percentile in academic motivation 72 or 44 percent had earned above a 3.0 the first semester, 78 students or 48 percent had earned between a 2.0-3.0, and the remaining 6 percent were below 2.0.

Of the 143 students who scored below the 40 percentile in academic motivation, 27 percent had above a 3.0, 46 percent had between a 2.0-3.0, and the remaining one-fourth were below a 2.0.

Without a statistical analysis, it is apparent that there is a positive correlation between students' academic achievement and their academic motivation. Of the group of students who are highly motivated, only 6 percent are not achieving satisfactory grades. However, it is also evident that among the lowly motivated students the majority succeed even though their grades are lower than the highly motivated students. The group who are moderately motivated (40-60) achieve about the same degree of success as the lowly motivated group.

TABLE II

Comparison of the Academic Motivation to Academic Achievement of Groups of Students
N=372

G.P.A.	Academic Motivation					
	Above 60 Percentile		40-60 Percentile		Below 40 Percentile	
	Number	Percent	Number	Percent	Number	Percent
Above 3.0	72	44	21	30	39	27
2.5-2.9	44	27	15	22	26	18
2.0-2.4	34	21	15	22	41	28
1.5-1.9	4	.02	6	.08	20	13
1.0-1.4	2	.01	9	.13	13	.09
Below 1.0 or Drop-out	5	.03	2	.02	4	.02
Total	161	98	68	97	143	97

Comparison of Academic Achievement & Reading Percentiles of Students by College Program.

The 416 students included in the study were divided by programs into: allied health, secretarial, business, liberal arts, and liberal studies. As noted earlier, only 399 students had reading scores and 38 students had dropped out before receiving a semester grade report. Thus, even though all 416 students are shown in Table III, the reading percentile ranges are based on 399 students.

Table III shows that eight percent of the total group were allied health students who scored above the 60 percentile. Of that group, 25 students received above a 3.0, 7 received between a 2.0-3.0, and the other 4 have below a 1.0. Of the three percent of allied health students who had below a 40 percentile in reading, 10 had above a 2.0 and 4 had dropped out. The table can be read in like manner for each of the other groups by program.

Table III

Reading Percentiles & Grade Point Averages of Students by Program
N=416

G.P.A.	Reading Percentiles								
	Allied Health			Secretarial			Business		
	over 60	40-60	under 40	over 60	40-60	under 40	over 60	40-60	under 40
Above 3.0	25	4	3	14	6	3	15	10	4
2.5-2.9	6	4	7	11	2	5	6	2	8
2.0-2.4	1	1	0	4	6	14	8	1	9
1.5-1.9	0	0	0	0	1	0	2	5	7
1.0-1.4	1	0	0	1	0	5	0	1	6
Below 1.0	3	0	0	0	0	0	0	0	0
Drop-out	0	0	4	0	1	6	0	0	8
Total No.	36	9	14	30	16	33	31	19	42
Percentage of Total	8	2	3	7	3	8	7	4	10

TABLE III (cont'd)

G.P.A.	Reading Percentiles					
	Liberal Arts			Liberal Studies		
	over 60	40-60	under 40	over 60	40-60	under 40
Above 3.0	23	9	7	8	5	4
2.5-2.9	11	4	6	7	1	9
2.0-2.4	8	6	12	5	1	9
1.5-1.9	4	2	5	4	1	2
1.0-1.4	3	2	0	3	0	2
Below 1.0	0	0	0	0	0	0
Drop-out	0	5	5	0	4	5
Total Number	49	28	35	27	12	31
Percentage of Total	11	6	8	6	2	7

Comparison of Students' Logical Reasoning Ability and Their Academic Achievement.

Another part of the Comparative Guidance and Placement Program is called "letter groups." It is composed of five groups of letters with four letters in each group. Four of the groups share a characteristic which the fifth does not have. The student must try out various hypotheses to determine which of the groups is different. The test is given to measure the students' inductive reasoning in a nonverbal context.

One-fourth of the students in this study of logical reasoning scored below the 40 percentile, one-half scored above the 60 percentile, and the remaining one-fourth were in the middle range 40-60. In comparing the academic achievement of the group which scored below 40 percentile with the group which scored high, one finds these differences: about twice as many received above a 3.0 G.P.A. in the high ability group as in the low ability, and twice as many of the low ability group had below a 2.0 or had dropped out as in the high ability group.

TABLE IV

Comparison of Logical Reasoning Ability & Academic Achievement of M.C.C. Students

N=413

G.P.A.	Logical Reasoning					
	Above 60 Percentile		40-60 Percentile		Below 40 Percentile	
	Number	Percent	Number	Percent	Number	Percent
Above 3.0	85	41	24	20	21	21
2.5-2.9	48	23	29	27	13	13
2.0-2.4	34	16	25	23	28	28
1.5-1.9	13	6	5	5	11	11
1.0-1.4	11	5	14	13	14	14
Below 1.0 or Drop-out	16	8	9	8	13	13
Total	207	99	106	96	100	100

In looking at Table IV, one can see that 85 students or 41 percent of those having above average logical reasoning ability had over a 3.0 grade point average. And, 23 percent had a 2.5-2.9, 16 percent had between a 2.0-2.4, leaving only 19 percent below a 2.0 G.P.A. Seventy percent of the middle range group had over a 2.0, and 62 percent of the below average had over a 2.0 grade point average. This shows a definite correlation between logical reasoning ability and academic achievement.

Conclusions

After studying the relationship between reading speed and comprehension, academic motivation, and logical reasoning, with the academic achievement of Middlesex Community College students, one can clearly see some correlations. However, when comparing the reading and comprehension scores of students who do and do not ask for assistance, there is less evidence of correlation between requests for assistance and academic achievement.

It is not clearly shown that students who ask for assistance do better or worse than those who do not ask for assistance. What is shown clearly is that reading speed and comprehension is closely related to academic success. And, that students who have above the 60 percentile in reading are much less apt to drop out.

There appears to be a lack of recognition among students of the importance of reading. Or, perhaps a lack of awareness or acknowledgement on the part of students with low reading ability that they do not read as well as students who achieve at a higher academic level.

Academic motivation is shown to be one of the factors that relates to above average academic achievement. But, it was seen that lowly motivated students do satisfactory academic work in the majority of the cases (even though they do not achieve as high academically as the highly motivated).

There is not much difference in reading ability among students in various programs. However, the two groups with the highest (above 60) reading percentiles and high grade points (above 3.0) are the allied health and the liberal arts. It was obvious that there are no "drop-outs" among the students who have above 60 percentile in reading regardless of their program. The greatest number of "drop-outs" in each program was in the group with below average reading ability.

Students with high scores in logical reasoning are more apt to do well academically than those with less logical reasoning. In fact, there is a descending degree of academic achievement with each lower level of logical reasoning.

Recommendations.

The Comparative Guidance and Placement Program should be used as an indicator to determine which students need reading and study skills assistance. All students who score below the 60 percentile in reading should receive group counseling. They should be informed of the various assistance programs available to them and of the importance of reading speed and comprehension to success in college. Those indicating an interest should be enrolled in advancement programs.

Students scoring below 40 percentile in academic motivation should be given motivational aids to help them achieve at a higher level academically. Those in the middle range (40-60) of academic motivation should be informed of the programs available but allowed to make their own decision about enrolling in the motivational programs.

Advancement and motivational programs should be planned, developed, and offered both during the summer session and in the fall and spring sessions for groups of students identified by the CGP as needing such assistance.

Dr. Glenda Lee
May 30, 1974

UNIVERSITY OF CALIF.
LOS ANGELES

FEB 28 1975

CLEARINGHOUSE FOR
JUNIOR COLLEGE
INFORMATION